



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,131	09/09/2003	Jun-Ling Fan	FANJ3004/EM	1901

23364 7590 05/20/2005  
BACON & THOMAS, PLLC  
625 SLATERS LANE  
FOURTH FLOOR  
ALEXANDRIA, VA 22314

EXAMINER

RAJGURU, UMAKANT K

ART UNIT	PAPER NUMBER
----------	--------------

1711

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/657,131

Applicant(s)

FAN ET AL.

Examiner

Umakant K. Rajguru

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 1764

1. A response (to non-final Office action of November 04, 2004) has been filed on February 03, 2005.
2. Claims now under examination are 1-7 and 9-20. (claim 21 has been misnumbered).
3. Following the amendment of instant claim 1, the earlier rejections (see items 3, and 5-8 of Office action of November 04, 2004) are now withdrawn. New rejections are set forth as below.
4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1, 2, 5, 6, 7, 9 and 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graham et al (US 5821284) in view of Kato (US 3475154).

Graham discloses an insulation for rocket motors. This insulation comprises EPDM rubbers, aramid fibers, ammonium sulfate and antimony oxide (abstract, col. 1, lines 65 to col. 2, lines 15). Silica is used as a filler (col. 8, lines 5). A blend of EPDMs is also suggested in table 1, col. 3 lines 21-22.

Graham does not mention that particles of ammonium sulfate are coated by a polyurethane rubbery material.

Kato discloses plural coated pellet form product. In col. 11 lines 9-12 patentee describes a crystalline ammonium sulfate coated with a first layer of polyurethane oil, then a layer of cumorene resin followed by a layer of an alkyd resin containing wax.

Art Unit: 1764

It would have been obvious to use polyurethane to coat the ammonium sulfate (used in the material of Graham) in order to minimize its solubility and to enhance antihygroscopic property.

6. Claim 3 rejected under 35 U.S. C. 103(a) as being unpatentable over Graham et al (US 5821284) in view of Kato (US 3475154) as applied to claims 1 & 2 above, and further in view of Barton (US 4667447).

Graham does not mention polyterpene of instant claim 3.

Barton describes coated abrasive sheet material. In col. 14, lines 64-68, patentee teaches a composition containing iron granules, ethylene vinyl acetate, polyterpene tackifier resin and antioxidant.

It would have been obvious to include the said polyterpene in the insulation material of Graham for imparting enhanced adhesion of the material to the rocket motors.

7. Claims 4, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graham et al (US 5821284) in view of Kato (US 3475154) as applied to claim 1 above, and further in view of Hert et al (US 5312856).

Graham does not mention (claimed) vulcanization accelerator.

Hert discloses thermoplastic elastomers useful for manufacturing tubes; seals, articles etc (abstract). A blend of polynorbornene and polyvinyl chloride is used with 4, 4' – dithiodimorpholine as one of suitable accelerators (col. 2, lines 41; col. 3, line 47).

It would have been obvious to use 4, 4' – dithiodimorpholine as an accelerator in material of Graham to bring about rapid and complete curing of the material.

Art Unit: 1764

8. Applicants on page 6 of their response, argue that "it is not possible to uniformly coat ammonium sulfate powder with polyurethane oil..." This argument is presented without any evidence in support therefor. Hence the argument is not persuasive to withdraw the cited rejection.

9. Applicant's amendment necessitated new ground (s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP§ 706.02(l)(3). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to U. K. Rajguru whose telephone number is (571) 272-1077. The examiner can normally be reached on Monday-Friday from 9:30 am to 6:00 pm.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J Seidleck can be reached on (571) 272-1078. The fax phone

Art Unit: 1764

number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



U. K. Rajguru/af  
May 13, 2005



James J. Seidleck  
Supervisory Patent Examiner  
Technology Center 1700